TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT NO. 31762

I. INTRODUCTION

This permit is for the operation of Weyerhaeuser Company's corrugated container plant, which is located in Yuma, Yuma County, Arizona.

A. Company Information

Facility Name:	Weyerhaeuser Company
Mailing Address:	2641 E. 24th Street Yuma,AZ 85365
Facility Location:	2641 E. 24th Street Yuma, AZ 85365

B. Attainment Classification (Source: 40 CFR §81.303)

Weyerhaeuser Company (Weyerhaeuser) is located in an area which is in nonattainment for particulate matter less than 10 microns (PM_{10}) and attainment or unclassified for all other criteria pollutants: nitrogen dioxide (NO_2), sulfur oxides (SOx), carbon monoxide (CO), lead (Pb) and ozone (O_3)

II. FACILITY DESCRIPTION

A. Process Description

Weyerhauser Company is a corrugated container plant. The first step in constructing a corrugated container (box) is the construction of the corrugated sheet of paperboard. Generally, three layers of paper are used, the two outer layers are known as linerboard and the wavy middle layer is called medium. The adhesive used to joint the three layers is primarily corn starch.

The starch will be unloaded into a silo, this process will be controlled with a small baghouse and losses to the environment should be minimal. The starch is transferred from the storage silo to the starch kitchen via a pneumatic system. Sometimes an additive is used in this corn starch adhesive to help it maintain a bond in moist environments. This additive will result in some VOC emissions from the plant. The adhesive is then pumped to the glue rolls on the corrugator.

The corrugator unwinds the medium, which is conditioned with steam and run through flute rolls to make the paper wavy. The peaks of the medium now roll across a glue roll and pick-up adhesive. The first layer of linerboard is now brought into contact with the medium forming a sheet known as 'single face'. The single face is run over another glue roll, again the peaks pick-up adhesive and the second layer of linerboard is brought into contact to form the corrugated sheet. The sheet now travels through a series of hot plates, heated with steam from the boiler. The edge of the sheet is trimmed off and the trim sent to the scrap collection system. Then the sheet is scored or slit as needed and sent to the knife which cuts it into individual sheets. The

sheets are stacked and transported to the finishing area.

In the finishing area the sheets will be run through one of four pieces of equipment. Three are of the type known as flexo-folder-gluers and the other one is a rotary die-cutter. The flexo-folder-gluers will print using flexography with water based inks, die cut, glue and fold the container. The die-cutter is essentially the same thing without the gluing and folding. The scraps generated by die-cutting operations are allowed to fall onto a small belt that carries the scrap to an entrance of the pneumatic scrap collection system. Some of the containers produced are saturated with wax to impart moisture resistance. Typically, these containers are used for field packed vegetables. The plant has several wax storage tanks and a wax cascader that is used to saturate the containers. The glue and flexographic ink each contain a small percentage of VOCs. These VOC will be released fugitively within the plant. Finished containers are palletized and shipped to our customers.

B. Air Pollution Control Equipment

One (1) baghouse for control of particulate matter from the starch silo

III. COMPLIANCE HISTORY

The following table summarizes the inspections found in the file that were conducted on the source.

Inspection Date	FAR Number	Type of Inspection	Results
9/27/05	67097	Periodic	In Compliance. Leak at one of the cyclones but facility said work order had been issued and repair scheduled for the same week.
6/16/04	50753	Annual	In Compliance
6/4/03	37627	Annual	In Compliance
1/23/01	25410	Annual	In Compliance
7/17/96		Annual	In Compliance
7/13/95		Annual	In Compliance
8/10/94		Annual	In Compliance

IV. EMISSIONS

The source was given an emission limit of 75 tons per year of VOC from the finishing process to keep facility-wide VOC emissions from exceeding the major source threshold. The source was given emission caps of 8.5 TPY of a single HAP and 22 tons per year of total HAPs to keep facility wide emissions of those pollutants from exceeding the major source threshold. The facility will be classified as a Minor Source pursuant to A.A.C. R18-2-302.B.2. The potential emission rates of the following criteria pollutants and HAPs will not be greater than major source thresholds.

Facility-wide Emissions *

Pollutant	Tons per Year
PM_{10}	25.61
VOC	90
SO_2	1.84
NO_x	37.17
CO	14.36
Federal HAPs	<8.5 tpy for any one HAP <22.0 for combination of HAPs

* Please refer to Class II application for detailed emission calculations.

V. APPLICABLE REGULATIONS

The following table summarizes the findings of the Department with respect to the regulations that are applicable to each emissions unit. Previous permit conditions are discussed under Section VI of this technical review document.

Applicable Regulations

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Boiler 1 Boiler 2 Boiler 3	2003	N/A	A.A.C. R18-2-724.C.1 R18-2-724.J R19-2-724.B	Allowable PM = $1.02Q^{0.769}$ Q = the heat input in million Btu per hour. Opacity less than or equal to 15%
Corrugator/Finishing Department	1988, last modified 1995	Baghouse	A.A.C. R18-2- 730.A.1.a 730.B. 730.D 730.F 730.G 702.B.1	Allowable PM = $4.1P^{0.67}$ P = Process weight rate in tons-mass per hour Opacity less than or equal to 20%

Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Firewater Pump	1988	N/A	A.A.C. R18-2- 719.E 719.C.1 719.B 719.I. 719.H 719.J 719.F	Allowable PM = $1.02Q^{0.769}$ Q = the heat input in million Btu per hour. Opacity less than or equal to 40% SO_2 less than or equal to 1 lb per million Btu Only fuel with less than 0.90% by weight of sulfur shall be burned.
Scrap Paper Handling System	1988	Two(2) Cyclones	A.A.C. R18-2-730.A.1.a 730.B 702.B.1	Allowable PM = $4.1P^{0.67}$ P = Process weight rate in tons-mass per hour Opacity less than or equal to 20%
Starch Silo	1988	Baghouse	A.A.C. R18-2-730.A.1.a 730.B 702.B.1	Allowable PM = $4.1P^{0.67}$ P = Process weight rate in tons-mass per hour Opacity less than or equal to 20%
Fugitive Emission sources	Not Applicable	Water and other reasonable precautions	*A.A.C.* R18-2-602 R18-2-604.A R18-2-604.B R18-2-605.A R18-2-605.B R18-2-606 R18-2-607.A R18-2-608.A R18-2-608 R18-2-612	The regulations listed are applicable to non point sources.
Abrasive Blasting	Not Applicable	Wet blasting, enclosure or equivalent approved by director	*A.A.C.* R18-2-702.B.1 R18-2-726	Relevant requirements applicable to abrasive blasting

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Unit ID	Year of Manufacture	Control Equipment	Applicable Regulations	Verification
Spray Painting	Not Applicable	Control measures that attain 96% efficiency	*A.A.C.* R18-2-702.B.1 R18-2-727.A R18-2-727.B R18-2-727.C R18-2-727.D SIP R9-3-527.C	Relevant requirements applicable to spray-painting.
Mobile Sources	Not Applicable	Control measure	*A.A.C.* R18-2-801.A R18-2-802.A R18-2-802.B R18-2-804.A R18-2-804.B	These regulations are applicable to all mobile sources.

VI. PREVIOUS PERMITS AND CONDITIONS

A. Previous Permits

The following table lists the previous permits that have been issued to Weyerhaeuser

Previous Permits

Date Permit Issued	Permit #	Application Basis
12/27/91	#94074-94	Operating Permit
1/25/99	#1000962	Minor Permit Revision
11/7/03	#30423	Class II Minor Permit Revision

B. Previous Permit Conditions

The following are discussions on the previous permits that have been issued to the source.

OPERATING PERMIT NO. #94074-94

This operating permit was issued to Weyerhaeuser on January 25, 1999 to operate one natural gas boiler, pneumatic scrap paper collecting cyclones and associated equipment.

OP #94074-94	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. A.	✓				General provisions - revised to represent most recent language
Att. B.I.1.			✓		Deleted by Minor Permit Revision # 30423.
Att. B.I.2.			✓		Regulatory citations are incorrect . 730 and 702 requirements will be in the permit.
Att. B.II.A.	✓				Particulate matter standard
Att. B.II.B.	✓				Boiler opacity standard changed to 15%. Opacity standard for cyclones is incorporated within opacity standard for processes. New condition No.s will be II.C.1.c and III.C.1.a
Att.B.II.C.			✓		Attachment “C” was removed by minor permit revision no. 1000962
Att.B.II.D.1.	✓				Excess emissions redefined in Minor Permit Revision #30423
Att.B.II.D.2.			✓		Excess emissions redefined in Minor Permit Revision #30423
Att.B.III.	✓				Condition revised slightly by Minor Permit Revision #30423. Permittee shall combust only natural gas in the boilers.

OP #94074-94	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att.C.			✓		Attachment C removed by Minor Permit Revision No. 1000962. Attachment C replaced with Attachment C "Equipment List"

MINOR PERMIT REVISION #1000962 TO OPERATING PERMIT #94074-94

This minor permit revision to the operating permit was issued to Weyerhaeuser on January 25, 1999 to add one wax cascader.

Minor revision #1000962	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. B.II.E.1		✓			Requirement to maintain Wax Cascader #413 in accordance with manufacturer specifications.
Att. B.II.E.2.	✓				Opacity limitation. Opacity limitation for all process sources is in Condition III.C.1.a. Opacity limitation is 20%
Att. B.II.E.3.	✓				Applicable to all the VOC sources at this facility. Renumbered to III.D.1.d.
Att.B, II.E.4.		✓			Applicable to all the VOC sources at this facility. Renumbered to IIII.D.1.e
Att. B.II.E.5.		✓			Applicable to all the VOC sources at this facility. Renumbered to III.D.1.f

MINOR PERMIT REVISION #34023 TO OPERATING PERMIT #94074-94

This minor permit revision to the operating permit was issued to Weyerhaeuser on November 7, 2003 to replace the boiler with three (3) new boilers.

Minor Revision #34023	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. B.II.A.		✓			PM standard
Att. B.II.B.1.	✓				Opacity standard for cyclones. Opacity limitation for all process sources is in Condition III.C.1.a.
Att. B.II.B.2.		✓			Opacity standard for boilers
Att. B.II.D.			✓		Definition of excess emissions
Att. B. II.E..		✓			Requirement for quarterly survey of visible emissions

Minor Revision #34023	Determination				Comments
	Revise	Keep	Delete	Stream-line	
Att. B.III.	✓				Permittee shall combust only natural gas in the boilers.

VII. MONITORING

A. Volatile Organic Compounds and HAPs

The VOC emissions from the finishing equipment will be limited to 75 tons per year. Single HAP emissions from the finishing equipment and the corrugator will be limited to 8.5 tons per year, Total HAP emissions from the finishing equipment and the corrugator will be limited to 22 tons per year. VOC limits on the finishing equipment when added to the potential to emit from the corrugator, wax storage tanks, diesel storage tank, boilers and firewater pump will ensure that VOCs do not exceed 90 tpy.

An equation is used to compute monthly VOC and HAP emissions. The total monthly emissions shall be added to the total monthly emissions for the previous consecutive 11 calendar months to establish rolling 12-month total emissions for the facility.

B. Opacity

1. Boilers:

   Boiler is subject to a 15% opacity

   A certified EPA Reference Method 9 observer is required to conduct quarterly surveys of visible emissions from the boiler stacks. If the opacity appears to exceed the standard, the observer shall conduct a certified EPA method 9 (Method 9) observation. The Permittee shall keep records of the name of the observer, date, time and results of the observation.

2. Process sources:

   Process sources are subject to a 20% opacity standard.

   A monthly survey of visible emissions from the Starch Silo, Corrugator, Scrap Paper Handling System # 1, and Scrap Paper Handling System # 2 will be required. If the opacity appears to exceed the standard, a Method 9 observation shall be required. Permittee shall keep records of the name of observer, date and time of the survey/observation, results of the survey/observation, and any corrective action taken.

3. Fugitive dust sources:

   Fugitive dust sources are subject to a 40% opacity standard.

A monthly survey of visible emissions from the non-point sources will be required. Permittee shall keep record of the name of the observer, the date and location on which the observation was made, and the results of the observation. If the observer sees a plume from a non-point source that on an instantaneous basis appears to exceed 40%, then the observer shall, if practicable, take a six-minute Method 9 observation of the plume. If the six-minute opacity of the plume is less than or equal to 40%, the observer shall make a record of the following: a) Location, date, and time of the observation; and b) The results of the Method 9 observation. If the the six-minute opacity of the plume exceeds 40%, then the Permittee shall do the following: a) Adjust or repair the controls or equipment to reduce opacity to below 40%; and b) report it as an excess emission under Section XII.A of Attachment "A".

4. IC Engines

A certified EPA Reference Method 9 observer is required to conduct monthly surveys of visible emissions from the firewater pump. If the opacity appears to exceed the standard, the observer shall conduct a certified EPA method 9 (Method 9) observation. The Permittee shall keep records of the name of the initial survey and any Method 9 observations performed. These records shall include the emission point observed, name of observer, date and time of observation, and the results of the observations. If the observations results in a Method 9 reading in excess of 40%, the Permittee shall report this to ADEQ as excess emission and initiate appropriate corrective action to reduce the opacity below 40%. The Permittee shall keep a record of the action performed.

C. Particulate Matter

1. Boilers:

The boilers are subject to A.A.C.R18-2-724. Facility is limited to burning natural gas only which results in minimal emissions. The PTE from each boiler is less than the allowable PM calculated from the equation in A.A.C. R18-2-724.C.1

2. Process Sources:

The facility is subject to A.A.C R18-2-730.A. Because the potential to emit particulate matter for the corrugator, scrap paper handling system, and the starch silo is less than the allowable PM calculated from the equation in 730. A, no monitoring for particulate matter has been required of these units.

3. IC Engines

The Firewater Pump is subject to A.A.C.R18-2-719. The Permittee shall keep records of fuel supplier certifications. The certification shall contain name of fuel supplier and heating value of the fuel. Facility is limited to burning diesel fuel with < 0.90 wt% sulfur. The PTE from the Firewater Pump is less than the allowable PM calculated from the equation in A.A.C.R19-2-719.C.1.

D. Sulfur Dioxide (SO_2)

Firewater Pump:

The Permittee shall maintain daily records of the sulfur content and lower heating value of the fuel fired in the internal combustion engines. The Permittee shall keep records of the fuel supplier certification which contains the sulfur content and method used to determine the sulfur content of the fuel. Unless the fuel batch changes, the fuel supplier certification can be maintained and the record not updated daily. The records shall be made available to ADEQ upon request. The Permittee shall report to the Director any daily period during which the sulfur content of the fuel being fired in the machine exceeds 0.8%.

E. Fugitive Dust Sources, Mobile Sources, and Other Periodic Activities

1. Fugitive Dust Sources

   Open Areas, Roadways & Streets, Storage Piles and Material Handling control measures required.

   Maintain record of the dates of dust minimizing activities, reasonable precautions and the control measures that were adopted.

   Maintain copies of open burning permits on file.

2. Mobile Sources

   Opacity limit

   Keep record of all emissions related maintenance activities performed on the mobile sources as per manufacturer's specifications.

3. Other Periodic Activities

   a. Abrasive Blasting

      For each abrasive blasting project, log in ink or electronically, the date the project was conducted, the duration of the project, and type of control measures employed.

   b. Spray Painting

      For each spray painting project, log in ink or electronically, the date the project was conducted, the duration of the project, type of control measures employed, MSDS for all paints and solvents used in the project; and the amount of paint consumed during the project.

VIII CORRUGATED PAPER PRODUCTION

To provide certainty regarding the VOC emissions associated with the corrugator, the Permittee is accepting a production limit of 3 billion square feet of corrugated paper in any rolling 12-month period. The Permittee will keep necessary records to track compliance with this limitation.

IX IMPACTS TO AIR QUALITY

Modeling was submitted October 2004. The SCREEN3 model was used. With the exception of PM_{10}, compliance with all criteria pollutant standards and with health based guidelines for arsenic, benzene, benz(a)anthracene, benzo(a)pyrene, beryllium, cadmium, chromium, dibenzo(a,b)anthracene, dichlorobenzene, formaldehyde, hexane, manganese, mercury, naphthalene, nickel, selenium, and toluene was demonstrated. A modeling report was submitted May 2005 which showed compliance with the PM10 standards. The Industrial Source Complex model was used instead of the SCREEN3 model employed in the earlier work. The highest predicted PM_{10} concentrations from the plant are 1.5 ug/m^3 for the annual average and 28 ug/m^3 for the 24-hour average.

X. LIST OF ABBREVIATIONS

AAAQG ..... Arizona Ambient Air Quality Guideline
A.A.C. ..... Arizona Administrative Code
ADEQ ..... Arizona Department of Environmental Quality
ADHS ..... Arizona Department of Health Services
AQD ..... Air Quality Division
AQG. ..... Air Quality Guidelines
Btu/ft^3 ..... British Thermal Units per Cubic Foot
CO ..... Carbon Monoxide
CO_2 ..... Carbon Dioxide
DEGF ..... Degrees Fahrenheit
DEGK ..... Degrees Kelvin
FERC ..... Federal Energy Regulatory Commission
ft ..... Feet
g ..... Grams
HAP ..... Hazardous Air Pollutant
hp ..... Horsepower
hr ..... Hour
IC ..... Internal Combustion
lb ..... Pound
m ..... Meter
MMBtu ..... Million British Thermal Units
$\mu g/m^3$ ..... Microgram per Cubic Meter
MMCFD ..... Million Cubic Feet Per Day
NAAQS ..... National Ambient Air Quality Standard
NO_x ..... Nitrogen Oxide
NO_2 ..... Nitrogen Dioxide
O_3 ..... Ozone
Pb ..... Lead
PM ..... Particulate Matter
PM_{10} ..... Particulate Matter Nominally less than 10 Micrometers
Psia ..... Pounds per square Inch (absolute)
PTE ..... Potential-to-Emit
s ..... Seconds
SO_2 ..... Sulfur Dioxide
TPY ..... Tons per Year
TSP ..... Total Suspended Particulate
USEPA ..... United States Environmental Protection Agency
VOC ..... Volatile Organic Compound
yr ..... Year